

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the reasons that follow. Claims 1-8 have been rejected. Claim 1 has been amended. Claims 9-12 have been cancelled without prejudice. Claims 13-16 have been added. No new matter has been added. Claims 1-8 and 13-16 will therefore be pending in this application upon entry of this Reply and Amendment.

Election/Restrictions

In Section 1 of the Office Action, the Examiner withdrew from consideration claims 9-12 for being drawn to claims that are independent from the originally filed claims. Claims 9-12 have been cancelled without prejudice.

New dependent Claims 13-16 have been added and depend from independent Claim 1. Dependent Claims 13-16 are believed to be in the elected group as being directed to a rechargeable battery.

Claim Rejections – 35 U.S.C. §112

In Section 5 of the Office Action, the Examiner rejected Claim 1 under 35 U.S.C. §112 ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Claim 1 has been amended and is definite and in compliance with 35 U.S.C. §112 ¶ 2. The Applicant requests withdrawal of the rejection of Claim 1 under 35 U.S.C. §112 ¶ 2.

Claim Rejections – 35 U.S.C. § 103(a)

In Section 7 of the Office Action, the Examiner rejected Claims 1-8 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,410,610 titled “Pole Bushing For Batteries” to Quist (“Quist”) in view of U.S. Patent No. 6,309,429 B1 titled “Lead Acid Storage

Battery and Method of Bonding Battery Cell Terminal Posts and Bushings” to Lund et al. (“Lund”).

The Examiner stated:

With regard to Claim 1, Quist discloses in Figure 3, a rechargeable battery having a cover (5), the rechargeable battery comprising: at least one connecting pole comprising a pole shank, called a post (6), inserted into a pole sleeve, called a metal sleeve (1) having an inner surface (9), wherein the pole sleeve (1) is electrically conductively connected to the pole shank (6) and is held in a liquid-tight and gas-tight manner by the cover (5) (column 2 lines 17-22 and lines 34-36); wherein a first section of the pole shank (6) is electrically conductively connected in a gas-tight and liquid-tight manner to the inner surface of the pole sleeve (9) (column 2 lines 17-22 and lines 34-36); and further comprising a sliding element, called a sealing element (2), provided between a second section of the pole shank (6) and the inner surface of the pole sleeve (1) forming an inner surface (4) of the sealing element.

However, the Examiner acknowledged:

Quist does not disclose wherein the connecting pole being closed from the outside of the rechargeable battery such that the rechargeable battery is liquid-tight and gas-tight; and wherein the diameter of the first section of the pole shank is smaller than the diameter of the second section of the pole shank.

The Examiner stated:

Lund et al. discloses in Figures 1 and 2, a lead acid storage battery (10) including a case (12) and cover (20) having terminal posts (22) extending upwardly through terminal bushings (21). The case (12) contains a plurality of battery cell elements that are electrically coupled to the terminals (11) on the top side thereof (column 3 lines 1-4). In Figure 2, it can be seen that the rechargeable battery located in the lower portion of the housing is closed off from the terminal posts (22) and is only attached to the bottom portion of the terminal posts. This arrangement allows for the rechargeable battery to be liquid-tight and gas-tight. In another embodiment, Figure 5, Lund et al. discloses wherein the terminal post (22), or

connecting pole, is closed off from the outside of the entire rechargeable battery by applying a final or outer cover (5).

The Examiner concluded:

Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use an outer cover to close the terminal posts off from the outside of the battery of Quist, because Lund et al. teaches providing a hermetic seal about the formed terminal (column 6 lines 3-9). Lund et al. also discloses in Figure 3, wherein the terminal posts (22), or pole shank, have a slight upward external taper (column 3 lines 9-12), resulting in the first section (the upper portion) of the pole shank having a smaller diameter than a second section (lower portion) of the pole shank. Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use a terminal post having a first section with a diameter smaller than a second section as part of the rechargeable battery of Quist, because Lund et al. teaches that the tapered terminal post is easily positionable into respective tapered axial openings of the bushings, which allow for proper seating of the terminal during assembly of the cover on to the battery case (column 3 lines 11-17).

Quist is directed to a "pole bushing for batteries" including a "sleeve 1 of metal, which is embedded in a sealing material 2 to form a sealing element with external 3 and internal 4 surfaces for making direct contact with the battery cover 5 and a post 6 extending through the cover 5." See Quist at Col. 2, lines 7-12 and Fig. 3.

Lund is directed to a "lead acid storage battery and method of bonding battery cell terminal posts and bushings" including "a cover 20 having terminal bushings 21 mounted therein with terminal posts 22 of the battery cell elements extending upwardly through respective bushings 21, as depicted in FIG. 3." Lund further discloses at Col. 3, lines 6-22 and Fig. 3:

The terminal posts 22, which may be made of a conventional lead alloy, have a slight upward external taper and are positionable into respective tapered axial openings 24 of the bushings 21 shaped generally complementary to the terminal posts 22. The lowermost end of each bushing opening 24 has an outwardly flared chamfer 25 for guiding the respective terminal post 22 into proper seating

relation to the bushing 21 during assembly of the cover 20 onto the case 12. For reliably supporting the bushings 21 in the cover 20, the bushings 21 each have a ribbed outer peripheral mounting portion 26 adapted to provide a strong mechanical connection with the plastic cover 20, while forming an effective seal about the periphery of the cover and bushing.

Claim 1 is in independent form and recites a “rechargeable battery” comprising, in combination with other elements, a “sliding element” and a “pole shank” wherein the “diameter of the first section is smaller than the diameter of the second section to provide an intermediate space between the pole sleeve and the pole shank.” Claims 2-8 depend from independent Claim 1.

The “rechargeable battery” recited in independent Claim 1 would not have been obvious in view of Quist, alone or in any proper combination with Lund, under 35 U.S.C. §103(a). Quist, alone or in any proper combination with Lund, does not disclose, teach, or suggest a “rechargeable battery,” comprising, in combination with other elements, a “sliding element” and a “pole shank” wherein the “diameter of the first section is smaller than the diameter of the second section to provide an intermediate space between the pole sleeve and the pole shank.”

For example, Quist teaches a straight walled “post 6” that does not have a “diameter of the first section” that “is smaller than the diameter of the second section,” as recited in Claim 1. Lund teaches a “terminal post 22” having a “slight upward external taper” that does not allow for an “intermediate space between the pole sleeve and the pole shank” as recited in Claim 1.

The Applicant also notes that the “sealing material 2” of Quist is not the same as the “sliding element” (of Claim 1). Rather, the “sealing material 2” of Quist provides a seal between the “sleeve 1” and “post 6” (see Quist at col. 2, lines 14-17), as opposed to the “sliding element” (of Claim 1) that “makes it relatively simple to fit a pole sleeve to a pole shank” and “largely avoids damage to the pole shank and/or to the pole sleeve when the pole sleeve is pushed onto the pole shank” (see present disclosure at paragraphs [0015] and [0016]).

To transform the “pole bushing for batteries” of Quist and the “lead acid storage battery and method of bonding battery cell terminal posts and bushings” of Lund into a “rechargeable battery” (as recited in Claim 1) would require still further modification, and such modification is taught only by the Applicant’s own disclosure. The suggestion to make the combination of Quist and Lund has been taken from the Applicant’s own specification (using hindsight), which is improper.

The “rechargeable battery” recited in independent Claim 1, considered as a whole, would not have been obvious in view of Quist and/or Lund. The rejection of Claim 1 over Quist in view of Lund under 35 U.S.C. § 103(a) is improper. Therefore, Claim 1 is patentable over Quist in view of Lund.

Claims 2-8, which depend from independent Claim 1, are also patentable. See 35 U.S.C. § 112 ¶ 4.

The Applicant respectfully requests withdrawal of the rejection of Claims 1-8 under 35 U.S.C. § 103(a).

* * *

It is submitted that each outstanding objection and rejection to the Application has been overcome, and that the Application is in a condition for allowance. The Applicant requests consideration and allowance of all pending claims.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper

or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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